

WE CLAIM:

**CLAIMS**

1. In a mobile wireless communications device, a method  
5 for presenting a direction, the method comprising:  
determining the magnetic bearing of the wireless  
communications device; and,  
presenting a direction responsive to the magnetic bearing.

10 2. The method of claim 1 wherein determining the  
magnetic bearing of the wireless communications device includes selecting  
a reference axis having a predetermined relationship to the magnetic  
bearing; and,  
wherein presenting a direction responsive to the magnetic  
15 bearing includes displaying the reference axis.

3. The method of claim 2 wherein the reference axis  
points to magnetic North.

20 4. The method of claim 2 in which the wireless  
communications device includes a display screen with a screen axis;  
wherein displaying the reference axis includes:  
fixedly aligning the reference axis with the screen axis; and,  
supplying a direction readout of the reference axis responsive  
25 to the rotation of the screen axis.

5. The method of claim 2 further comprising:  
receiving global positioning system (GPS) location  
information;

5 selecting a landmark having a predetermined location;  
using the GPS information to locate the wireless device; and,  
generating a reference axis between the wireless  
communications device location and the landmark location.

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10 6. The method of claim 2 further comprising:  
receiving global positioning system (GPS) location  
information;  
receiving map information; and,  
wherein displaying the reference axis includes creating and  
displaying a map display responsive to the map information, showing the  
15 wireless communications device location on the map.

7. The method of claim 6 in which the wireless  
communications device includes a display screen with a screen axis;  
wherein displaying the reference axis includes:  
20 fixedly aligning the reference axis with the screen axis; and,  
rotating the map display in response to the rotation of the  
screen axis.

8. The system of claim 7 wherein displaying the reference  
25 axis includes displaying the magnetic bearing of the reference axis.

9. The method of claim 6 in which the wireless communications device includes a display screen with a screen axis; wherein displaying the reference axis includes: fixedly aligning the reference axis with the screen axis; and, displaying the magnetic bearing of the screen axis.

10. The method of claim 9 wherein displaying the magnetic bearing of the display screen axis includes displaying a magnetic bearing icon on the map.

11. The method of claim 1 wherein determining the magnetic bearing of the wireless communications device includes correcting the magnetic bearing with respect to true North.

12. In a mobile wireless communications device, a system for indicating a direction, the system comprising:  
a magnetic detection circuit to determine orientation in a magnetic field, the magnetic detection circuit having an output to supply a magnetic bearing signal responsive to the determined orientation;  
a direction circuit having an input to accept the magnetic bearing signal and an output to communicate a reference axis signal; and,  
a user interface screen having an input to receive the reference axis signal and an output display responsive to the magnetic bearing of the wireless communication device.

13. The system of claim 12 wherein the direction circuit has an input to accept data defining a relationship between the magnetic bearing and a reference axis, wherein the direction circuit determines the direction of the reference axis based on the defined relationship, and  
5 wherein the reference axis signal includes the direction of the reference axis; and,

wherein the user interface screen displays the reference axis direction.

10 14. The system of claim 13 wherein the direction circuit defines the reference axis to be magnetic North and the user interface screen includes an icon representing magnetic North.

15 15. The system of claim 13 wherein the user interface screen has a surface with a screen axis defined with respect to the surface; and,

wherein the direction circuit defines the reference axis to be fixedly aligned with the screen axis and the reference axis signal is responsive to the rotation of the screen axis; and,

20 wherein the user interface screen displays the direction of the screen axis.

16. The system of claim 13 wherein the direction circuit has an input to receive global positioning system (GPS) location  
25 information and an input for selecting a landmark having a predetermined location, wherein the direction circuit uses the GPS

information to locate the wireless device and generates a reference axis signal defining a vector between the wireless communications device location and the landmark location.

5                   17.    The system of claim 13 wherein the direction circuit has an input to receive GPS location information and an input to receive map information oriented in a directional coordinate system and wherein the direction circuit uses the GPS and map information to generate a map showing the location of the wireless communications device, and wherein  
10   the direction circuit supplies a map signal for displaying the map with the reference axis signal; and,

                  wherein the user interface screen accepts the map signal and displays the map in response to the map signal.

15                   18.    The system of claim 17 wherein the user interface screen has a surface with a screen axis defined with respect to the surface;  
                  wherein the direction circuit defines the reference axis to be fixedly aligned with the screen axis and rotates the map directional coordinate system in response to the reference axis; and,

20                   wherein the user interface screen rotates the map display in response to rotations of the screen axis.

                  19.    The system of claim 18 wherein the user interface screen displays the direction of the screen axis.

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20. The system of claim 17 wherein the user interface screen has a surface with a screen axis defined with respect to the surface;

wherein the direction circuit defines the reference axis to be fixedly aligned with the screen axis and transposes the screen axis

5 direction onto the map directional coordinate system; and,

wherein the user interface screen displays a map showing the location of the wireless device and the direction of the screen axis.

21. The system of claim 20 wherein the direction circuit  
10 generates a directional icon, overlaid on the map.

22. The system of claim 12 wherein the magnetic detection circuit corrects the magnetic bearing with respect to true North.

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